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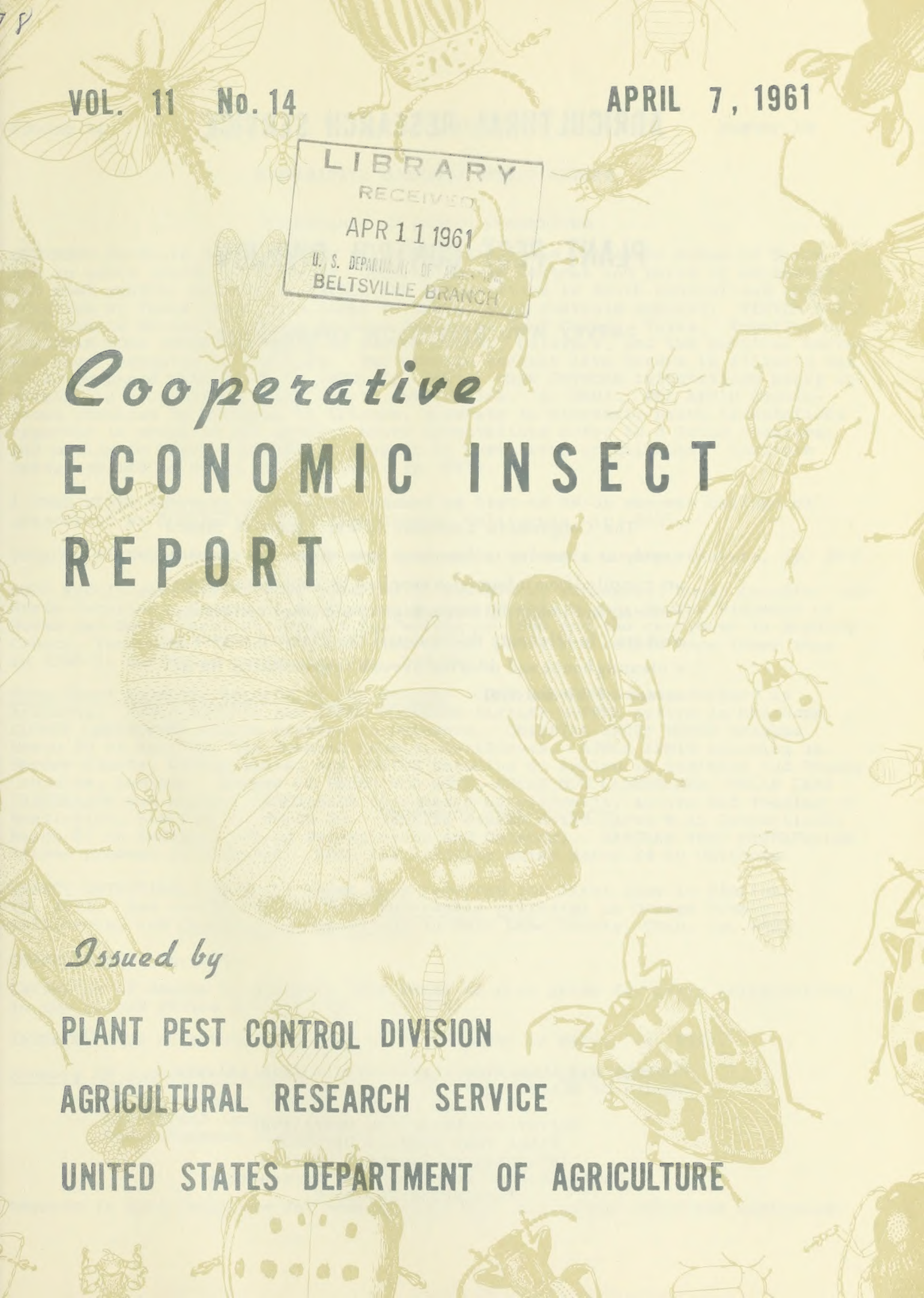

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Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
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Volume 11 April 7, 1961 Number 14

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GREENBUG controls being applied in north central and Panhandle areas of Texas and in south central, southwest, central, north central and parts of northwest and east central Oklahoma. CHINCH BUG infestations in south central and coastal counties of Texas range from light to heavy; some controls applied. WINTER GRAIN MITE damage evident to wheat in some fields in Kent County, Texas. Pupation of EUROPEAN CORN BORER has begun in Sussex County, Delaware, and the survival survey has been completed in Illinois. The average percent live borers in Illinois was 73.23 compared with 67.27 in 1960. (p. 259). ARMY CUTWORM infestations heavy in alfalfa in northern Dona Ana County, New Mexico. (p. 260). PEA APHID populations continue to increase in Arizona; moderate to extremely heavy infestations reported in areas of New Mexico; heavy infestations noted in 3 Texas counties; and medium to heavy populations present in most areas of Oklahoma. Controls being applied in Texas and Oklahoma. (p. 261).

A PEEL MINER (Marmara salictella) caused as high as 29-35 percent cullage of grapefruit at Coachella, Riverside County, California. (p. 262).

TOBACCO WIREWORM heavy on newly set tobacco in Colquitt County, Georgia. (p. 264).

BOLL WEEVIL survival surveys reported in Louisiana, Tennessee, South Carolina and North Carolina. Counts of live weevils considerably higher in the Piedmont of North and South Carolina than in the spring of 1960 and the carryover in McNairy County, Tennessee, is the highest since 1953. Survival counts were lower than in 1960 in northeast Louisiana. (pp. 264-265).

Some First Reported Records of the Season: CORN EARWORM adults trapped in Arkansas. VETCH BRUCHID and THREE-CORNERED ALFALFA HOPPER active in Oklahoma. CLOVER LEAFHOPPER adults present in Delaware. ORIENTAL FRUIT MOTHS trapped March 20 at Escalon, San Joaquin County, California. APPLE APHID hatching in Snyder County, Pennsylvania; and APHIDS hatching on apples in Lawrence and Orange Counties, Indiana. Larvae of PECAN BUD MOTH, PECAN NUT CASEBEARER, PECAN LEAF CASEBEARER and another CASEBEARER (Acrobasis caryivorella) active and feeding at Monticello, Florida, on March 20. TERMITE swarms noted March 6 in Connecticut; March 27 in Indiana; and in Pennsylvania and Oklahoma. EASTERN TENT CATERPILLAR larvae present in Delaware. HORN FLY activity noted March 24 in Oklahoma.

INSECT DETECTION: Tropical horse tick reported for first time in Florida. (p. 267). New county records were Euceraphis gillettei in Orange County, California, and Chaitophorus knowltoni in Salt Lake County, Utah. (p. 266).

CORRECTIONS (p. 269).

Estimates of damage by EUROPEAN CORN BORER to corn grown for grain (utilization) in the United States in 1960. (pp. 271-272).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 273).

Summary of Insect Conditions - 1960 (continued from page 256)

- Stored-product Insects - (p. 274).
- Beneficial Insects - (p. 278).
- Miscellaneous Insects - (p. 281).

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Reports in this issue are for week ending March 31, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

APRIL 1961

The Weather Bureau's 30-day outlook for April calls for temperatures to average below normal over a broad band extending from New England southwestward through the Ohio Valley, the Central Plains, and into the Southwest. Above-normal temperatures are predicted for the Gulf Coast, the South Atlantic States, and the Northern Plains. In unspecified areas, near-normal averages with large fluctuations are in prospect. Precipitation is expected to exceed normal over most of the Nation except for near to subnormal amounts over the Northern Plains, the Far Southwest, the extreme Southeast, and northern New England.

Weather forecast given here is based on the official 30-day "Resume and Outlook", published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price $4.80 a year, $2.40 a half year.

WEATHER OF THE WEEK ENDING APRIL 3

The main weather features of the week were the occurrence of badly needed moderate to locally heavy rain and snow at the beginning of the period in the Southwest; additional moderate to heavy flood-producing thunderstorms accompanied by scattered hailstorms and a number of tornadoes across the South; floods in the Iowa-Minnesota-Wisconsin area; several windy days in nearly all areas; a change to cold weather during most of the week in the Interior and late in the week in the East; and unusually early high temperatures in the Far Southwest at the end of the period. Snowfall ranged up to 10 inches in eastern Colorado on the 28th, and to 9 inches in Kansas and 5 inches in the Texas-Oklahoma Panhandle by the night of the 30th. A total of 3.26 inches of rain fell in 24 hours at Greenville, Texas, and about 2.50 inches in 6 hours at Montgomery, Alabama. Damaging hailstorms occurred across north-central and northeastern Texas on the 28th, with golf-ball size hail at Dallas. Hail 3/4 inch in diameter fell at Shreveport, Louisiana. Tornadoes were reported from sections of Oklahoma, Texas, Louisiana, Alabama, Georgia, and northern Florida.

This week was the first time since February that temperatures for the week averaged below normal in most of the Great Plains. In the Dakotas and northern Minnesota, temperatures were as low as 5° to 10° on the morning of the 1st. In the East, afternoon temperatures were in the 70's as far north as Michigan and New York State at the beginning of the week, but they dropped to the 40's by Friday, and minimum temperatures reached freezing in the northern portions of the Gulf States on the mornings of the 2d, 3d, and 4th. In contrast, a high temperature of 83° at Reno, Nevada, on the 2d, and 103° at Yuma, Arizona, on the 3d, set new records for so early in the season. Temperatures for the week averaged above normal from the Pacific States northeastward over the northern Rockies, along the Gulf Coast, and in the Atlantic States. The plus departures exceeded 4° in the eastern Washington-Idaho-western Montana area and along the south Atlantic coast. The week averaged 4° to 6° cooler than normal in a large interior area from New Mexico and middle Texas northeastward over the middle and northern portions of the eastern Great Plains and Mississippi Valley to Indiana.

Precipitation was heavy in a general area extending from northeastern Texas and eastern Oklahoma eastward over the South and northward over the Appalachian region to southern New York. Totals exceeded 6 inches in south-central portions of Mississippi and Alabama. Amounts were heavy also along the coast of Washington and Oregon, in sections of Iowa, Minnesota and Wisconsin, and along the eastern coast of New England. Elsewhere, precipitation was generally light to moderate, with less than 0.25 inch in most of the Great Plains and western half of the country. The ground is generally free of snow, except the mountains in the Far West, sections of Upper Michigan, western Pennsylvania, western and northern New York State, and the northern and mountainous section of New England. Maximum temperatures in the upper 20 inches of the soil rose into the 40's in central Iowa. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - TEXAS - Heavy infestations still present in many fields in north central and Panhandle areas. Many farmers applying controls. Little new spotting occurring because of fast growth of grain. Beneficial insect populations spotted - a few fields have abundant numbers; other fields have few. (Newton). Light to heavy and widespread in Kent and Garza Counties. Little damage apparent. (Texas Coop. Rpt., Whitaker, Boren). OKLAHOMA - Populations continued to increase in fields of small grain throughout south central, southwest, central, north central and parts of northwest and east central areas. Additional fields in all affected areas continued to show increased effects of greenbug feeding. Dead spots continue to be noted in a higher percentage of fields surveyed each week but counts still vary greatly from field to field within any given area. Chemical controls being applied to infested fields in all areas mentioned above. Parasites and predators increasing in all areas. (Okla. Coop. Sur.). KANSAS - Observed in only one wheatfield in south central area. This field was in Sumner County. Counts were 1 adult and 4-5 nymphs per foot of row. (Somsen).

ENGLISH GRAIN APHID (Macrosiphum granarium) - KANSAS - Counts in wheatfield in Sumner County were 1 per foot of row. (Somsen). MISSOURI - Light populations present in wheat in southwest area. Counts ranged 0-20 per foot of row; averaged 7. (Munson, Thomas, Wood). OKLAHOMA - Common in small grain throughout State. Populations varied greatly (from 10 to several thousand per linear foot) within any given area. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - MISSOURI - Very light in wheat; only an occasional specimen found in southwest area. (Munson, Thomas, Wood). OKLAHOMA - Common throughout grain-producing areas of State. Populations variable, with counts ranging from 25 to several thousand per linear foot in small grains. (Okla. Coop. Sur.).

YELLOW SUGARCANE APHID (Sipha flava) - OKLAHOMA - Common, up to 50 per linear foot, in a limited portion of a barleyfield in Marshall County. (Okla. Coop. Sur.).

CHINCH BUG (Blissus leucopterus) - TEXAS - Infestations in south central and coastal counties widespread and range from light to heavy. Controls being applied in some fields. (Newton, Randolph, Bredthauer).

LYGUS BUGS (Lygus spp.) - UTAH - Largely L. elisus, active generally and even coming to lights at night. (Knowlton).

RHODES-GRASS SCALE (Antonina graminis) - NEW MEXICO - Bermuda grass lawns in Las Cruces area, Dona Ana County, heavily infested. This pest has severely damaged a great number of lawns. (N. M. Coop. Rpt.).

BROWN WHEAT MITE (Petrobia latens) - COLORADO - Counts in wheat 1-5 per linear foot of drill row in Lincoln, Kit Carson and Yuma Counties. (Jenkins). OKLAHOMA - Counts averaged up to 100 per linear foot in few fields of small grain checked in southwest area. (Okla. Coop. Sur.).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Heavy, widespread in Kent County wheat fields. Damage evident in some fields. (Texas Coop. Rpt., Whitaker, Boren). OKLAHOMA - Light infestations continue common in fields of small grain in western half of State. Counts ranged up to 20 per plant (10-12 inches high) in some fields checked in Tillman County. (Okla. Coop. Sur.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - DELAWARE - Pupation of overwintering larvae started in Sussex County. No pupation noted in New Castle and Kent Counties. (Burbutis, Mason). MARYLAND - Survival appears to be high in stalks examined in Worcester County. Twelve larvae collected; no pupae. (U. Md., Ent. Dept.). ILLINOIS - Survival survey completed. Percentage of living borers by districts was 78.4 in west-southwest, 73.6 in west, 66.4 in central, 75 in east, 72 in northeast and 74 in northwest. The State average was 73.23 percent live borers in March 1961 compared with 67.27 percent live borers in March 1960. (Ill. Ins. Rpt.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSOURI - Two fields in southwest area checked for surviving borers. In one field, 21 percent of girdled stalks contained live borers; and in other field, 16 percent of girdled stalks contained live borers. (Munson, Thomas, Wood).

CORN EARWORM (Heliothis zea) - ARKANSAS - Special studies have been made and are continuing on early season activity of this species. First specimens taken in light traps this season were one at Kelso, southeast area, on March 27 and one at Hope, southwest area, on March 28. (Ark. Ins. Sur.). OKLAHOMA - Larval counts averaged 0.5-1 per sweep in alfalfa surveyed in southeast area. (Okla. Coop. Sur.).

ARMY CUTWORM (Chorizagrotis auxiliaris) - NEW MEXICO - Heavy infestations in alfalfa in northern Dona Ana County. A number of fields checked almost completely defoliated. Counts in heavily infested fields 3-16 per square foot. (N. M. Coop. Rpt.). COLORADO - One larva found in wheat in Lincoln County; none found in Kit Carson or Yuma Counties. (Jenkins). OKLAHOMA - Cutworms, probably C. auxiliaris, damaging a variety of crops in localized areas of Alfalfa County. (Okla. Coop. Sur.).

CUTWORMS - FLORIDA - Undetermined species damaging young sweet corn in Belle Glade area. No preplanting insecticidal treatment was made to this planting and a certain chlorinated hydrocarbon is apparently giving little or no control. (Genung). TEXAS - Moderate infestations of several species attacking young grain sorghum in south central and coastal counties. (Newton).

AN ARMYWORM (Leucania latiuscula) - FLORIDA - Infestation reported last week (CEIR 11(13):224) as damaging 300 acres of sugarcane in Belle Glade, now appears under control; decrease in larvae also due partially to pupation. (Genung).

A WEEVIL (Hyperodes humilis) - FLORIDA - Appears lighter than in 1960 on corn which is 8 days out of the ground at Belle Glade. (Harris).

A BILLBUG (Sphenophorus callosus) - GEORGIA - Light infestation noted on corn in Cook County. (Johnson).

DESERT CORN FLEA BEETLE (Chaetocnema ectypa) - ARIZONA - Medium populations present on sweet corn in Yuma County. (Ariz. Coop. Sur.).

SPRINGTAILS - TEXAS - Heavy, widespread infestations in young grain sorghum in Refugio County. (Bredthauer).

GRASSHOPPERS - UTAH - Eggs of Camnula pellucida very abundant in a meadow area northwest of Manti, Sanpete County. (Funk, Knowlton).

ALFALFA WEEVIL (Hypera postica) - DELAWARE - First-instar larvae more common than previous week on alfalfa in Kent and New Castle Counties, with a noticeable increase in hatch of eggs in old alfalfa stalks noted. (Burbutis, Mason). MARYLAND - Numerous first-instar larvae taken by examining alfalfa near woods in Worcester County. Very light in other fields of alfalfa in same county. (U. Md., Ent. Dept.). VIRGINIA - Light, local infestation of first-instar larvae active in a depleted stand of alfalfa in Pittsylvania County. (Dominick, Mar. 14). Active in untreated fields in Craig, Montgomery, Franklin, Henry, Patrick and Floyd Counties during week of March 13. (Rowell, Tarpley). Many second, and possibly third, instar larvae observed in alfalfa in Roanoke, Bedford, Campbell, Nottoway, Prince Edward, Lunenburg and Brunswick Counties. Infested fields not believed to have been fall treated. (Rowell). NORTH CAROLINA - Adults present in fields in Buncombe County. (Baker, Farrier). GEORGIA - Light infestation noted on crimson clover in Dougherty County. (Johnson). UTAH - Much control has been applied in northern and central areas. Adults generally active. (Knowlton). CALIFORNIA - Heavy population on alfalfa in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) - CALIFORNIA - Light populations occurring on alfalfa in Redlands area, San Bernardino County; medium infestations in San Luis Obispo, San Luis Obispo County, and in Corona, Riverside County. (Cal. Coop. Rpt.).

CLOVER LEAF WEEVIL (Hypera punctata) - ARKANSAS - Built up to as high as 15-20 per square foot in some northwestern area alfalfa fields. Some fields in Marion County being treated. (Ark. Ins. Sur.).

CLOVER HEAD WEEVIL (Hypera meles) - GEORGIA - Infesting alfalfa in Tift County. (Beck).

VETCH BRUCHID (Bruchus brachialis) - OKLAHOMA - Counts averaged 1 per sweep in field of vetch checked in Choctaw County. (Okla. Coop. Sur.).

CUCUMBER BEETLES (Diabrotica spp.) - CALIFORNIA - D. balteata and D. undecimpunctata undecimpunctata infestations spottedly heavy on alfalfa in San Luis Rey area of San Diego County. (Cal. Coop. Rpt.). OKLAHOMA - D. undecimpunctata howardi common in light numbers, up to 1 per sweep, in alfalfa and vetch in southern half of State. (Okla. Coop. Sur.).

PEA APHID (Macrosiphum pisi) - ARIZONA - Populations continue to increase in alfalfa statewide; counts average 6-10 per terminal. (Ariz. Coop. Sur.). NEW MEXICO - Extremely heavy infestations damaging or even killing out established stands of nonresistant or nontolerant alfalfa in northern Dona Ana County. Moderate to heavy infestations also reported in De Baca County. (N. M. Coop. Rpt.). TEXAS - Heavy infestations (up to 200 per sweep) in alfalfa in Wilbarger, Wichita and Hardeman Counties. Very few beneficial insects present. Controls being applied to many fields. (Newton). Light to moderate, 25-50 per sweep, in Brazos County alfalfa. (Doering). OKLAHOMA - Medium to heavy populations, up to several hundred per sweep, continued common in fields of alfalfa, vetch and clover surveyed in most areas of State. Chemical controls applied to some fields in most areas. (Okla. Coop. Sur.). VIRGINIA - Heavily infesting alfalfa on a farm near Martinsville, Henry County. (Pollard, Mar. 14). MARYLAND - Light numbers appearing on alfalfa in Worcester County. (U. Md., Ent. Dept.). DELAWARE - Present on alfalfa in western Kent County. (Burbutis, Mason).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Damaging alfalfa in southwest area (averaging up to 1000 plus per square foot of crown area); generally light in central and south central areas; and light, but increasing over previous week's counts (now ranging from 15 to 75 per sweep), in southeast area. (Okla. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Limited numbers, up to 0.5 per sweep, noted in few fields of alfalfa in south central and southeast areas. (Okla. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Overwintering adults now very active on alfalfa; averaging 2 per 10 sweeps. (Burbutis, Mason). OKLAHOMA - Common in alfalfa surveyed in most areas; counts ranged 1-3 per sweep in west central, southwest, south central, central and southeast areas and from 0.1-0.2 in east central area. (Okla. Coop. Sur.).

CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - DELAWARE - First adults of season present on alfalfa in Kent County; averaged 1-2 per 10 sweeps. (Burbutis, Mason).

ALFALFA CATERPILLAR (Colias eurytheme) - OKLAHOMA - Light numbers, up to 1 per sweep, noted in few fields of alfalfa in south central and southeast areas. (Okla. Coop. Sur.).

ALFALFA LOOPER (Autographa californica) - CALIFORNIA - Light infestation on alfalfa in San Miguel and Shandon areas of San Luis Obispo County. (Cal. Coop. Rpt.).

FRUIT INSECTS

ORIENTAL FRUIT MOTH (Grapholitha molesta) - CALIFORNIA - Trap indications show heavy collection of moths on March 20 in Escalon, San Joaquin County. (Cal. Coop. Rpt.). NORTH CAROLINA - Injury to 1960 growth present on 4 trees in Cumberland County. (Monroe).

CODLING MOTH (Carpocapsa pomonella) - UTAH - Overwintering larvae in northern area have not yet pupated. (Davis, Knowlton).

GREEN PEACH APHID (Myzus persicae) - NEW MEXICO - Very abundant in peach blossoms in Hatch area, Dona Ana County. Appear to be preventing formation of fruit, for blossoms are dropping. (N. M. Coop. Rpt.). CALIFORNIA - This species and Aphis spiraecola light on citrus in Pomona area, Los Angeles County. (Cal. Coop. Rpt.).

APPLE APHID (Aphis pomi) - PENNSYLVANIA - Beginning to hatch on apples in Snyder County. (Gesell).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - NEW JERSEY - Primarily this species, becoming less difficult to find, especially on earlier apple varieties. Feeding on partially open green buds. (Ins.-Dis. Newsl., Mar. 28).

APHIDS - INDIANA - Hatching on apples in the area of Lawrence and Orange Counties week ending March 29. (Marshall).

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Heavy on prune trees in Richfield, Tehama County. (Cal. Coop. Rpt.).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - CALIFORNIA - Heavy infestation on pears in Westley, Stanislaus County. (Cal. Coop. Rpt.).

ORCHARD MITES - NEW JERSEY - Eggs of unspecified species present in orchards, but no mites have been observed. (Ins.-Dis. Newsl., Mar. 28). UTAH - Survival of eggs of Bryobia rubrioculus on orchard trees in northern area appears higher than normal. (Knowlton, Davis).

PECAN BUD MOTH (Gretchena bolliana) - FLORIDA - Young larvae feeding on young pecan foliage at Monticello, Jefferson County, March 20. (Phillips).

CASEBEARERS - FLORIDA - Larvae of Acrobasis caryae, A. juglandis and A. caryivorella active and feeding on opening buds or young foliage of pecans at Monticello, Jefferson County, March 20. (Phillips).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - CALIFORNIA - Locally heavy on walnut in Stockton, San Joaquin County. (Cal. Coop. Rpt.).

A PEEL MINER (Marmara salictella) - CALIFORNIA - Present during January and February mining peel and damaging new growth tips on grapefruit in Coachella, Riverside County. This is normally a pest of willow and attacks nearby citrus. In the Coachella Valley willow is absent, but oleander is the associated host. As high as 29-35 percent cullage resulted from this infestation. Control treatment included both citrus and oleander. (L. Atkins).

OMNIVOROUS LOOPER (Sabulodes caberata) - CALIFORNIA - Light on orange in Marysville, Yuba County. (Cal. Coop. Rpt.).

A MAY BEETLE (Phyllophaga elizoria) - FLORIDA - Collected in blacklight trap in Lake Placid, Highlands County, by J. C. Hanlon, March 27. This is a rare species found early in the season and occasionally reported damaging citrus nursery stock. It is one of the few species of this group that is sometimes found during the day. (Fla. Coop. Sur.).

MELON APHID (Aphis gossypii) - CALIFORNIA - Populations heavy on navel oranges in Riverside area, Riverside County. (Cal. Coop. Rpt.).

CALIFORNIA RED SCALE (Aonidiella aurantii) - CALIFORNIA - Heavy on citrus in Durham, Butte County. (Cal. Coop. Rpt.).

THRIPS - CALIFORNIA - Heavy adult populations of Frankliniella occidentalis on grapefruit blossoms in Borrego Springs, San Diego County. (Cal. Coop. Rpt.). ARIZONA - First-generation infestations of Scirtothrips citri light but general in citrus areas of Maricopa and Yuma Counties. (Ariz. Coop. Sur.).

YUMA SPIDER MITE (Eotetranychus yumensis) - ARIZONA - Infestations increasing in some Yuma County citrus groves. (Ariz. Coop. Sur.).

GRAPE SCALE (Aspidiotus uvae) - ARKANSAS - Causing concern to several grape producers in northern part of State; some vineyards have been seriously damaged. (Ark. Ins. Sur.).

TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Averaged 3-5 per leaf on untreated potatoes in central and southwest areas. (Ariz. Coop. Sur.). DELAWARE - Numbers increased on spinach in Sussex County, with average of 1.4 per plant. (Burbutis, Mason).

APHIDS - FLORIDA - Averaged 6-7 per 10 leaflets on bell pepper and eggplant at Belle Glade. (Harris).

AN EGGPLANT LEAF MINER (Keiferia sp.) - FLORIDA - Infesting 25 percent of leaves on untreated eggplant in Belle Glade. (Harris).

WOOLLYBEAR CATERPILLARS - FLORIDA - Unknown species damaging watermelons in Devils Garden area, Hendry County. (Hayslip).

MELON APHID (Aphis gossypii) - FLORIDA - Noticeable on cucurbits at Homestead. (Wolfenbarger).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Increasing on cabbage in Homestead area (Wolfenbarger) and moderate on untreated crucifers in Ft. Pierce area (Hayslip).

DIAMONDBACK MOTH (Plutella maculipennis) - FLORIDA - Moderate in combination with Trichoplusia ni on untreated crucifers in Ft. Pierce area. (Hayslip).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults common on spinach in Sussex County. (Burbutis, Mason).

A SERPENTINE LEAF MINER - FLORIDA - Has nearly disappeared in most areas, but still present in scattered local infestations in south central portion. Apparently natural enemies have reduced populations earlier than usual. (Fla. Coop. Sur.).

THRIPS - NEW MEXICO - Unspecified species beginning to increase on onions in Mesilla Valley. (N. M. Coop. Rpt.).

SPIDER MITES - NEW JERSEY - Few Tetranychus telarius on strawberries in southern counties. (Ins.-Dis. Newsl., Mar. 28). MARYLAND - Eggs of Tetranychus sp. moderate on strawberry foliage at a location in Worcester County. (U. Md., Ent. Dept.).

ROSE STEM GIRDLER (Agrilus rubicola) - UTAH - Still in larval stage in raspberries in Utah County. (Davis).

TOBACCO INSECTS

TOBACCO WIREWORM (Conoderus vespertinus) - GEORGIA - Heavy infestations on newly set tobacco in Colquitt County. (Johnson); moderate on tobacco in Irwin County (Brannen).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - GEORGIA - Moderate infestations on tobacco in the plant bed in Tift, Berrien, Cook and Colquitt Counties. Light to moderate on tobacco in the field in Tift and Colquitt Counties. (Johnson).

GREEN JUNE BEETLE (Cotinis nitida) - MARYLAND - Larvae disturbing sprouting plants in tobacco bed at Largo, Prince Georges County. (U. Md., Ent. Dept.)

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH and SOUTH CAROLINA - Spring surface woods trash examinations to determine the number of adults that survived the winter were made during the period March 9-28 in the same four representative areas of North Carolina and South Carolina in which fall examinations were made in 1960. In each area, a total of 30 locations (farm sites) was sampled with 3 samples of 2 square yards each being taken at each location. The same locations were sampled in both the fall and spring examinations. The areas were as follows: Area 1 - south central South Carolina (Orangeburg, Dorchester and Bamberg Counties); area 2 - Coastal Plain of South and North Carolina (Florence, Darlington and Marlboro Counties, S. C., and Scotland County, N. C.); area 3 - Piedmont of South and North Carolina (Anderson, Greenville and Spartanburg Counties, S. C., and Mecklenburg, Cleveland and Union Counties, N. C.); area 4 - north central North Carolina (Nash, Wilson, Franklin and Edgecombe Counties). The average number of live weevils found per acre in areas 1, 2, 3 and 4 was 376, 1,129, 1,558 and 430, respectively. The percent survival for these areas was 11.4, 8.6, 17.4 and 16.7, respectively. The average number of weevils entering hibernation in the fall of 1960 in these 4 areas was 3,308, 13,148, 8,954 and 2,582 per acre, respectively. The 1961 survival figure of 376 weevils per acre is below the 1960 spring average of 861 weevils per acre in area 1. Survival figures of 1,129 and 430 weevils per acre in areas 2 and 4 are approximately equal to the 1960 survival figures of 1,049 and 377 weevils per acre. The survival of 1,558 weevils per acre in area 3 is well above the 1960 average of 590 weevils per acre. In Florence County, South Carolina, an average of 699 weevils per acre was found in the spring of 1961, with a winter survival of 6.5 percent. This percent survival, the lowest on record, compares with that for the spring of 1958, but the number of weevils surviving is only 45 percent less than in 1960. (A. R. Hopkins, H. M. Taft, PPC). TENNESSEE - A survey was made in McNairy County to determine the number of live weevils that overwintered in the western part of the State. McNairy County was chosen for the survey because it usually supports the heaviest populations of weevils. Fall trash examinations indicate that the average number of live weevils was 2,622 per acre. Spring examinations of cotton field environ trash taken on March 15 and 16 indicated that there were 1,815 live weevils per acre. The survival was 69 percent. This is the highest carryover since 1953, when 2,200 live weevils were found to the acre. The average number in the spring of 1959 was 807 per acre, with a survival percentage of 33. (J. H. Locke).

LOUISIANA - Collections of surface ground (woods) trash samples were made from February 16 through March 24 in the northeast area, comprised of East Carroll, Madison and Tensas Parishes. The number of live weevils per acre was 1,453 in East Carroll Parish, 1,574 in Madison Parish and 3,551 in Tensas Parish. The average for the three-parish area was 2,193 as compared with 4,748 in the spring of 1960. The winter survival for the three-parish area, based on the 2,193 weevils per acre found in the spring of 1961, compared with 11,487 found in the fall of 1960, was 19 percent. In Madison Parish, where similar records have been made for 25 years, the survival for the winter of 1960-61 was 23 percent as compared with the average of 40 percent for the 25 years. (G. L. Smith).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - First moth catch of the year (a female) made March 20 in light trap 6 miles north of Hyder, just inside eastern Yuma County line. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - CALIFORNIA - *Dendroctonus brevicomis*, *D. valens* and *Ips* spp. active on ponderosa pine in the Mineral district; about 600 acres in Round Mountain-Buck Flat, 80 acres in Middle Ridge and 160 acres in Shelton Ridge areas. Over 300 all-age trees killed so far in these areas of Lassen and Trinity Counties. (T. A. Hoots). About 1,800 acres infested, with 1,415 ponderosa pines dead or dying in Big Creek Basin, Stump Creek Road and Jose Basin of Sierra National Forest. (H. E. Wakesdal). In the North Fork Antelope Creek, Tehama County, some 500 ponderosa and sugar pines treated, which should reduce infestation in 350-acre stand. (T. W. Nelson).

FIR ENGRAVER (*Scolytus ventralis*) - CALIFORNIA - A serious outbreak in white fir along Blackwood Creek and Kaspian Campground along the north shore of Lake Tahoe, Placer County. (N. C. Anderson).

A WEEVIL (*Pissodes approximatus*) - PENNSYLVANIA - Adults found in duff at base of Scotch pine trees. Feeding damage varied from severe to negligible. (Udine).

WHITE-PINE WEEVIL (*Pissodes strobi*) - PENNSYLVANIA - Heavy infestations on white pine, Scotch pine and Douglas-fir at McAlveys Fort, Huntingdon County. (Udine).

A REPRODUCTION WEEVIL (*Cylindrocopturus eatoni*) - CALIFORNIA - Severe damage to young reproduction ponderosa pines in the Brushridge area of Stanislaus National Forest, where one acre has been killed. Approximately 60 percent of the stems infested. (R. A. Gilkey).

A PINE SAWFLY (*Neodiprion* sp.) - NORTH CAROLINA - Egg survival indicates no area will be severely affected this year, except local areas which have been missed in survey. Outlook is improved over past two years. Larvae now hatching. (Green). VIRGINIA - Hatch two weeks earlier than usual in southern area, beginning March 6-7; as far north as Farmville and Charlottesville areas March 25. Apparently this early hatch resulted from week of unusually warm weather during first of March. Interest continues in naturally occurring virus and bacterial diseases of this sawfly. (Dean).

PINE BARK APHID (*Pineus strobi*) - VIRGINIA - Infesting white pines at a home in Troutville, Botetourt County, March 22. Infesting 90 percent of 4-year-old stand at home near Tazewell, Tazewell County. (Rowell, Boitnott, Cassell).

SCALE INSECTS - PENNSYLVANIA - *Pseudophilippia quaintancii* collected by State Forester from Scotch pine at Bedford, Fulton County. (Balsbaugh, Mar. 19). MARYLAND - *Fiorinia externa* injuring hemlock at locality in Baltimore. (U. Md., Ent. Dept.).

TENT CATERPILLARS (Malacosoma spp.) - DELAWARE - First M. americanum larvae of season found on wild cherry in Sussex County. (Kelsey). VIRGINIA - M. americanum eggs hatching at Newport News. (Amos, Mar. 10). OKLAHOMA - Early instar larvae of Malacosoma sp. common in native plum thickets throughout southern half of State. (Okla. Coop. Sur.). TEXAS - M. americanum light and scattered on hawthorn and redbud in Erath and Bosque Counties. (Newton). Heavy infestations of M. disstria reported in Caldwell, Guadalupe, Brazos and Erath Counties. (Texas Coop. Rpt.).

WESTERN TUSSOCK MOTH (Hemerocampa vetusta) - CALIFORNIA - Medium infestation on Quercus agrifolia in Arcadia, Los Angeles County. (Cal. Coop. Rpt.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - CALIFORNIA - Heavy populations on Chinese elm in North Carlsbad, San Diego County. (Cal. Coop. Rpt.).

BAGWORM (Thyridopteryx ephemeraeformis) - NORTH CAROLINA - About 1,000 bags on large cedar tree in Bladen County; many bags with viable eggs. (Bowers). VIRGINIA - Common at a home in Ivanhoe, Wythe County. (Rowell, Mar. 13).

A BLASTOBASID (Holcocera iceryaeella) - CALIFORNIA - Medium infestation on Pinus mughus in San Francisco, San Francisco County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - CALIFORNIA - Heavy infestation of larvae on orchid blooms in Brea, Orange County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - Nymphs and adults of Aphis sp., near gossypii, medium on tamarix in Buena Park, Orange County. Heavy populations of Pemphigus bursarius on poplar in Imperial, Imperial County; this is an extension of the range of this aphid. Heavy populations of Euceraphis gillettei damaging new growth of alder (Alnus sp.) in Fullerton, Orange County; apparently a new county record. Myzocallis arundinariae heavy on bamboo in Oroville, Butte County. (Cal. Coop. Rpt.). ARIZONA - Infestations of Cinara sp. heavy on arborvitae throughout southern part of State. (Ariz. Coop. Sur.). NEW MEXICO - Damage by Cinara tujafilina to arborvitae very noticeable in southern counties. (N. M. Coop. Rpt.). UTAH - Chaitophorus knowltoni numerous on willow bark in Big Cottonwood Canyon, Salt Lake County. This appears to be a new county record for this recently described species from the State. (Smith, Knowlton). OKLAHOMA - Various species becoming increasingly common on wide variety of ornamentals throughout State. Heavy on arborvitae, tulip, iris, rose and other plants in many areas. (Okla. Coop. Sur.). MARYLAND - Macrosiphum rosae appearing on rose foliage at several locations in Prince Georges County. (U. Md., Ent. Dept.).

COCCIDS - PENNSYLVANIA - Aspidiotus ulmi collected on horsechestnut at Harrisburg, Dauphin County. (G. B. Sleesman, Mar. 16). NEW MEXICO - Antonina graminis reported on Bermuda grass lawns in Las Cruces area, Dona Ana County; infestation heavy. (N. M. Coop. Rpt.).

A SPIDER MITE (Eotetranychus libocedri) - CALIFORNIA - Medium on Italian cypress in San Diego, San Diego County. (Cal. Coop. Rpt.).

SLUGS - NEW MEXICO - Unspecified species a problem in a greenhouse at Deming, Luna County; effective control difficult to obtain. (N. M. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - MARYLAND - Larvae of Culiseta melanura abundant in a stumphole filled with spring water near Ft. Meade, Anne Arundel County. (U. Md., Ent. Dept.). CALIFORNIA - Larval occurrence reports show slight decrease in populations since March 1, except in northern area where an abrupt drop occurred. Occurrence of Culex tarsalis has been very low in all areas. (Cal. Coop. Rpt.).

PSYCHODIDS - NORTH CAROLINA - Biting man locally in Mecklenburg County. (Cartner, Farrier).

COMMON CATTLE GRUB (Hypoderma lineatum) - NEW MEXICO - Adults beginning to annoy cattle in De Baca County. (N. M. Coop. Rpt.). OKLAHOMA - Adults annoying cattle throughout eastern half of State. (Okla. Coop. Sur.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Averaged 6-13 per animal on 375 head of cattle checked in Pushmataha County; first activity noted March 24. (Okla. Coop. Sur.).

SCREW-WORM (Callitroga hominivorax) - FLORIDA - Twenty-two traps produced negative results and 60 larvae examined were negative; 138,808 head of livestock were examined during February and found free of this pest. (Fla. Dept. Agr., Div. Anim. Ind.).

A HORSE FLY - OKLAHOMA - An unidentified species light (averaged 0.1 per animal) on 175 head of cattle checked in Pushmataha County on March 27. (Okla. Coop. Sur.).

CATTLE LICE - UTAH - Controls applied to 1,000 head of cattle by dipping and 300 head by spraying in Wayne County. More controls anticipated. (Knowlton). OKLAHOMA - Heavy infestations of several species continued common on untreated cattle throughout eastern half of State. Linognathus vituli heavy (averaged 8-10 per part) on cattle checked in Coyle area, Logan County. (Okla. Coop. Sur.).

BEDBUG (Cimex lectularius) - CONNECTICUT - Infesting certain poultry houses in New Haven and Windham Counties as of March 21. (Savos, Johnson).

BLOODSUCKING CONENOSE (Triatoma sanguisuga) - OKLAHOMA - Counts averaged 1-2 per nest in wood rat nests checked in Woods County. (Okla. Coop. Sur.).

TROPICAL HORSE TICK (Dermacentor nitens) - FLORIDA - Collected a total of 147 times on horses in 15 counties between July 1960 and March 10, 1961. Collected primarily in Broward, Dade and Palm Beach Counties; also found in Brevard, De Soto, Glades, Hendry, Hillsborough, Indian River, Lake, Marion, Monroe, Okeechobee, Orange and Volusia Counties. As far as can be ascertained these are the first records of this tick for Florida. (W. G. Bruce, Anim. Dis. Erad. Div.).

SOUTHERN CATTLE TICK (Boophilus microplus) - FLORIDA - A total of 49,740 cattle, mules and horses dipped during February in eradication program for this pest. (Fla. Dept. Agri., Div. Anim. Ind.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Common on cattle in eastern third of State; ranged 4-10 per animal on 375 head of cattle checked in Pushmataha County. (Okla. Coop. Sur.).

RABBIT FUR MITE (Cheyletiella parasitivorax) - OKLAHOMA - Found infesting some domestic rabbits checked in Oklahoma City. (Okla. Coop. Sur.).

STORED-PRODUCT INSECTS

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - DELAWARE - Heavy infestation in cereals and flour in home in New Castle County. (Burbutis, Mason). VIRGINIA - Common in some rockwool sent in from Rockingham County. The reason for their being there is unknown. (Tarpley, Tubaugh). OKLAHOMA - Counts averaged 27 per quart in stored grain sorghum surveyed on a farm in Marshall County. (Okla. Coop. Sur.).

A TENEBRIONID (Alphitophagus bifasciatus) - ARIZONA - Heavy population in stored sorghum seed in the Chino Valley, Yavapai County. (Ariz. Coop. Sur.).

CONFUSED FLOUR BEETLE (Tribolium confusum) - OKLAHOMA - Counts averaged 6 per quart in stored grain sorghum surveyed on a farm in Marshall County. (Okla. Coop. Sur.).

GRANARY WEEVIL (Sitophilus granarius) - OKLAHOMA - Counts averaged 21 per quart in stored grain sorghum checked on a farm in Marshall County. (Okla. Coop. Sur.).

INDIAN-MEAL MOTH (Plodia interpunctella) - NORTH CAROLINA - Infestation in a grocery store in Cherokee County. (Nave, Farrier).

BENEFICIAL INSECTS

A BRACONID (Aphidius testaceipes) - OKLAHOMA - Increasing in fields in most areas of State. Approximately one percent of greenbugs infesting small grain in many fields in south central area were found to be parasitized. (Okla. Coop. Sur.).

LADY BEETLES - OKLAHOMA - Hippodamia convergens becoming common in many fields of small grain throughout State. Adalia bipunctata, Chilocorus stigma and other species common on ornamentals in southern half of State. (Okla. Coop. Sur.). NEW MEXICO - Adults and larvae of unspecified species abundant in alfalfa in Dona Ana County infested with pea aphid, but aphid populations are so heavy beetles are unable to destroy infestations. (N. M. Coop. Rpt.).

NABIDS (Nabis spp.) - OKLAHOMA - Common in limited numbers (up to 0.4 per sweep) in alfalfa checked in south central and southeastern areas. (Okla. Coop. Sur.).

LACEWINGS (Chrysopa spp.) - OKLAHOMA - Adults common (up to 1.5 per sweep) in alfalfa surveyed in southern half of State. (Okla. Coop. Sur.).

MISCELLANEOUS INSECTS

TERMITES - CONNECTICUT - Reticulitermes flavipes swarming in a school in Tolland County during week of March 6; workers also attacking growing geraniums in a Hartford County greenhouse. (Savos, Johnson; Mar. 27). PENNSYLVANIA - Adults of unspecified species noted swarming in a home, a greenhouse and a bank building in Centre County and in a home in Clearfield County. (Adams). MARYLAND - Winged forms of R. flavipes noted in and around homes at localities in 5 counties. (U. Md., Ent. Dept.). INDIANA - Spring swarming flights of Reticulitermes sp. reported in Goshen, Elkhart County, March 27. (Matthew). OKLAHOMA - R. tibialis noted swarming in central, east central and northeastern areas. (Okla. Coop. Sur.).

COCKROACHES - MARYLAND - Nymphs and adults of Blatta orientalis and Periplaneta americana present in homes at localities in Montgomery County. (U. Md., Ent. Dept.). UTAH - Blatta orientalis infesting home at Pleasant Grove, Utah County, and Blattella germanica severely infesting commercial building at Salt Lake City. (Knowlton).

ANOBIIDS - CONNECTICUT - Ptilinus ruficornis caused some damage in a house in Fairfield County. (Savos, Johnson; Mar. 27). UTAH - Larvae of unspecified species numerous in floor joists in a building in Corinne, Box Elder County. (Knowlton).

A BAMBOO BORER (Dinoderus minutus) - CALIFORNIA - Heavy infestation in bamboo furnishings in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

BOXELDER BUG (Leptocoris trivittatus) - VIRGINIA - Common around home in Farmville, Prince Edward County. (Rowell, Mar. 13). UTAH - Troublesome in and about school rooms at Salt Lake City, Murray and Ogden in northern area of State. (Knowlton).

CABBAGE APHID (Brevicoryne brassicae) - CALIFORNIA - Heavy infestation on goosefoot weed (Chenopodium sp.) in Arlington, Riverside County. (Cal. Coop. Rpt.).

TEXAS LEAF-CUTTING ANT (*Atta texana*) - TEXAS - Heavy, local infestations in Bastrop and Montgomery Counties. Control demonstrations being held in some communities. (Clemons, Prince).

ODOROUS HOUSE ANT (*Tapinoma sessile*) - OKLAHOMA - Winged forms noted in annoying numbers in a home in Miami, Ottawa County. (Okla. Coop. Sur.).

CLOVER MITE (*Bryobia praetiosa*) - MARYLAND - Troublesome in and around homes in Baltimore, Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). VIRGINIA - Extremely abundant and crawling in home near Ettrick, Chesterfield County. (Rowell, Marshall; Mar. 21). NORTH CAROLINA - Invading 5-year-old brick house in Union County. (Nicholson, Farrier). UTAH - Entering a number of homes in Weber County. (Knowlton). CALIFORNIA - Heavy on outside of barn and invading residence in Herlong, Lassen County; heavy in residence in Julian, San Diego County. (Cal. Coop. Rpt.).

CORRECTIONS

CEIR 11(1): 9 and 10 - Cooperative Survey Entomologists and State Clearing Offices - Under Florida, change name from "State Plant Board" to *Division of Plant Industry*.

CEIR 11(5): Highlights - Under Insect Detection - Second sentence should read: New *county* records reported ...

CEIR 11(9): 118 - Under BEET WEBWORM (*Loxostege sticticalis*) in the fourth paragraph, the crop involved in Minnesota was *sugar beets*, not alfalfa,as stated.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Feltia subterr.	Perid. saucia	Prod. ornith.	Hel. zea	Proto. sexta
ARKANSAS							
Hope 3/24-29	7	14				1	
Morrilton 3/23-29	20	19					
Kelso 3/23-29	5			9		1	
FLORIDA							
Quincy 3/21		2	2				
Monticello 3/28			1			1	
KANSAS							
Mound Valley 3/23-24				1			
MISSISSIPPI							
Stoneville[1] 3/24-30	195	16	4	159	2		
SOUTH CAROLINA							
Clemson 3/25-31	1			3	5		
Charleston 3/27-4/2	3	3	12				
TEXAS							
Brownsville 3/18-24	194	130	77	254	1	81	2
WISCONSIN							
Middleton 3/26	2[2]						

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[1] Two traps - Stoneville

[2] One male and one female; female dissected and found unfertilized.

Estimates of Damage by the European Corn Borer to Grain Corn in the United States in 1960

Compiled in Survey and Detection Operations, PPC, ARS

The loss of corn grown for grain utilization from damage attributed to the European corn borer (Pyrausta nubilalis) in 1960 is estimated to be 102,991,000 bushels. This loss is approximately 2.6 percent of the total national crop estimated at 3,948,608,000 bushels. 1/ The value of the crop lost, based on the season average prices received by farmers for corn 2/, is $96,085,000. These loss estimates are only for the states shown in Table 1 and are based on the counties or districts surveyed during the fall of 1960 within those states. 3/

Table 1 is a composite of State and Federal estimates. These estimates were prepared by using production data 1/ and prices received 2/ released by the Agricultural Marketing Service. The basis for the loss estimates was determined by the survey of European corn borer populations during the fall of 1960. 3/ The index of 3 percent loss per borer per plant was used to compute the loss in bushels.

Estimated losses caused by the European corn borer in the last twelve years are as follows:

1960	102,991,000	Bushels	$ 96,085,000
1959	67,763,000	"	71,979,000
1958	100,699,000	"	98,434,000
1957	180,897,000	"	158,841,000
1956	97,971,000	"	119,535,000
1955	155,355,000	"	182,579,000
1954	191,614,000	"	261,415,000
1953	90,000,000	"	125,466,000
1952	53,270,000	"	77,205,000
1951	35,812,000	"	57,438,000
1950	58,765,000	"	84,912,000
1949	313,819,000	"	349,635,000

1/ Crop Production, 1960 Annual Summary by States, Crop Reporting Board, Agricultural Marketing Service, December 16, 1960.

2/ Crop Values, Season Average Prices Received by Farmers and Value of Production - 1959 and 1960 - by States, Crop Reporting Board, Agricultural Marketing Service, December 16, 1960.

3/ Status of the European Corn Borer in 1960. Cooperative Economic Insect Report. Vol. 10, No. 53, pp. 1156-1165.

Table 1. Estimates of Damage by the European Corn Borer to Corn Grown for Grain in the United States in 1960

State	Districts Included 1/	Total State Production	Estimated Data			
			Value Per Bushel	Value of Production	Loss of Crop	
	Number	1,000 Bu.	Dollars	$1,000	1,000 Bu.	$1,000
Arkansas	4	11,178	1.08	12,072	96	104
Delaware	1	9,300	1.20	11,160	994	1,192
Illinois	1	674,764	.93	627,531	13,006	12,096
Indiana	12	347,548	.90	312,793	7,033	6,330
Iowa	12	740,590	.90	666,531	30,850	27,765
Kansas	3	79,852	.97	77,456	946	918
Maryland	3	26,820	1.20	32,184	1,289	1,547
Minnesota	6	309,258	.85	262,869	9,660	8,211
Missouri	8	211,682	1.00	211,682	3,795	3,795
Nebraska	8	326,836	.97	317,031	18,707	18,145
New Jersey	1	8,840	1.30	11,492	394	512
North Dakota	2	8,932	.90	8,039	359	323
Ohio	1	247,656	.90	222,890	2,998	2,699
Pennsylvania	1	62,496	1.20	74,995	2,090	2,508
South Dakota	6	117,390	.87	102,129	7,232	6,292
West Virginia	1	6,032	1.35	8,143	107	144
Wisconsin	9	105,718	1.02	107,832	3,435	3,504
Totals		3,294,892		3,066,829	102,991	96,085

1/ Status of the European Corn Borer in 1960. Cooperative Economic Insect Report. Vol. 10, No. 53, pp. 1156-1165.

INTERCEPTIONS OF SPECIAL INTEREST AT U. S. PORTS OF ENTRY

Some important interceptions that were reported January 31, 1961, by the Plant Quarantine Division, ARS, USDA, follow. These reports are based on identifications received from Federal taxonomists at the U. S. National Museum during the month of January 1961. They do not necessarily represent interceptions taken during the month, but do include any of special interest from recent months that were not previously reported.

OLIVE MOTH (*Prays oleellus* (F.))3 times in green olives in baggage destined for New York State at New York, New York.

A PYRALID (*Megastes grandalis* Guen.) in sweetpotato in stores at Baltimore, Maryland.

A MITE (*Brevipalpus chilensis* Baker) on reed straw jacket in baggage destined for New York State at Miami, Florida.

VINE MOTH (*Lobesia botrana* (Schiff.)) in baggage destined for New York at New York, New York.

A GELECHIID (*Gnorimoschema* sp., apparently not *gudmannella* (Walsm.)) in pepper in baggage destined for Florida at Miami, Florida.

A TERMITE (*Nasutitermes costalis* (Holmgr.)) in dead tree branch with orchid attached in cargo destined for Florida at Miami, Florida.

A TERMITE (*Nasutitermes nigriceps* (Hald.)) in cargo of Bromeliads destined for Florida at Miami, Florida.

A STENOMID (*Stenoma catenifer* Walsm.) in baggage destined for Florida at Miami, Florida.

A NOCTUID (*Earias cupreoviridis* Wlk.) (a serious cotton pest in China) in okra in stores at Galveston, Texas.

KHAPRA BEETLE (*Trogoderma granarium* Everts) 19 times: at San Pedro, California, 2 times in stores and ship's hold; at Detroit, Michigan, one time in ship's hold; at Washington, D. C., Inspection House, one time with cottonseed in mail; at Boston, Massachusetts, one time in stores; at New York, New York, 8 times in gum arabic and guar gum cargoes for New York destinations; at Wilmington, North Carolina, 2 times in cargoes of guar gum and gum karaya destined for South Carolina; at Charleston, South Carolina, 3 times with cargoes of "Myrobalan" nuts and guar gum (also one in ship's hold); and at Houston, Texas, one time in stores.

A NOCTUID (*Sesamia nonagriodes* (Lef.)) (a cereal pest in the Mediterranean region) in dried cornstalks in cargo destined for Illinois at New York, New York.

PINK-BOLLWORM (*Pectinophora gossypiella* (Saund.)) at Charleston, South Carolina, with a cargo of teakwood contaminated with cottonseed; at New York, New York, 2 times in baggage, including cotton bolls in one case destined for Texas, found to contain 49 larvae.

A SUGAR-BEET CROWN BORER (*Gnorimoschema ocellatella* (Boyd)) with beet tops in baggage at New York, New York.

Summary of Insect Conditions - 1960

(continued from page 256)

STORED-PRODUCT INSECTS

Insects affecting stored products were more common in CALIFORNIA during 1960 and caused more inquiries from homeowners and from commercial establishments. Of primary importance within the State were khapra beetle, dried fruit beetle, carpet beetle and various moths. Many species exhibited unseasonable populations or abnormal feeding habits and became more noticeable than usual. Stored-grain pests were present in normal numbers in NEVADA and no economic infestations were encountered. There were scattered reports of insect infestations in stored wheat left in country elevators in the southeastern part of WASHINGTON during the winter of 1960, and local warehousemen had to fumigate in some instances. Checks that were made of farm-stored grain in OKLAHOMA revealed that farmers who had neglected to take adequate precautions to protect their grain were again plagued by several insects. Although most of the bins that were checked in Oklahoma were free of infestations, some were heavily infested. In TEXAS, the protection of stored grain was a major problem in 1960. A special survey was conducted in MISSOURI during the period December 1959 through February 1960. Of the total of 982 samples of wheat in storage for more than one year, that was taken in 72 counties, 23 percent was graded weevily, according to USDA standards. For additional information on this Missouri survey, see CEIR 10(16):297-298.

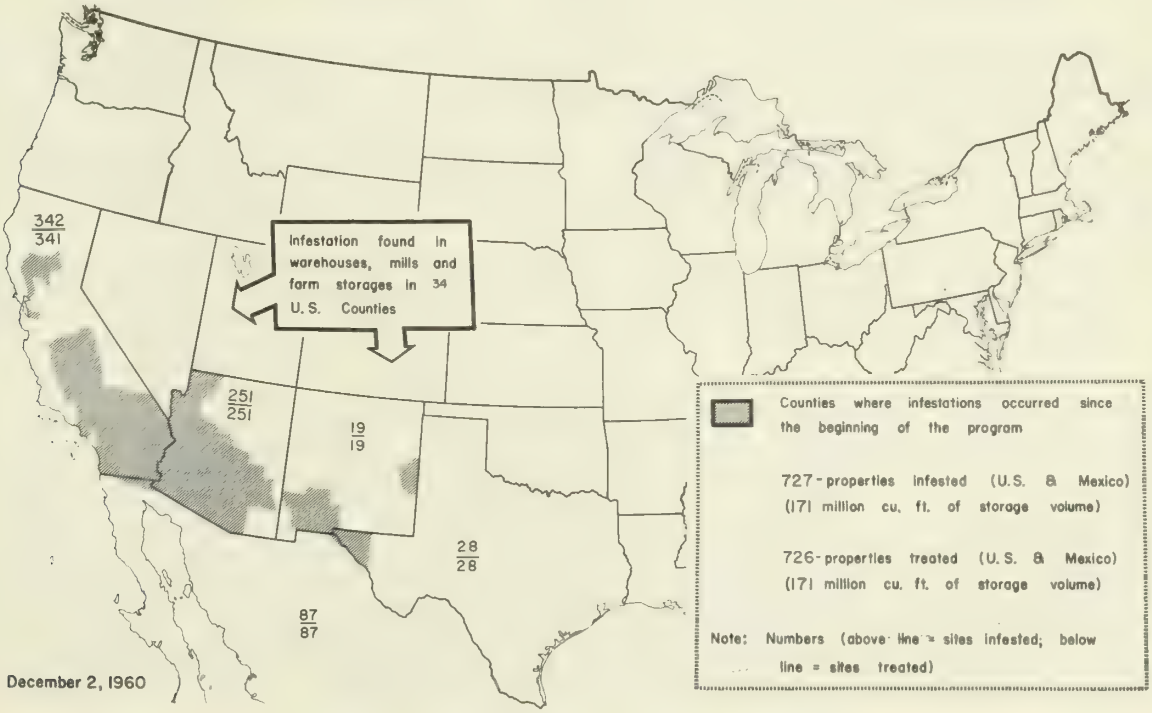
INDIAN-MEAL MOTH (Plodia interpunctella) adults were present in a seed-cleaning plant and warehouse in Sussex County, DELAWARE, in late March and early April. The occurrence of this pest in various stored products in MARYLAND was above normal in all sections of the State and infestations were reported in homes and barns in VIRGINIA. Indian-meal moth was frequently reported from several areas of RHODE ISLAND in the early spring. Infestations of the pest in KANSAS varied from light in the western portion of the State to moderate in the southeast section, and larvae and adults of Indian-meal moth were extremely abundant in feed stores and warehouses in southern NEW MEXICO during the summer months. The pest was one of the major insects affecting stored grain in TEXAS and damaged stored products in residences and feed and seed establishments in UTAH. Infestations also occurred in stored grain and grain products in OREGON and was quite frequently a source of annoyance to homeowners in CALIFORNIA, as well as being common in mills and processing plants in the latter State.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) was a very common pest in homes in CALIFORNIA, and quite frequently medium to heavy infestations occurred in milling plants and feed yard storage bins in that State. The insect was also reported as one of the major pests of stored grain in TEXAS during the year, and it was more of a problem than usual in stored corn in the eastern portion of KANSAS. In ILLINOIS, Angoumois grain moth was found in 13 of 30 counties surveyed in the southern half of the State; 11 of which were south of Route 50. In these 11 counties, 0-80 percent (average 29.9 percent) of corn ears was infested, with a trace to 2 percent of the kernels being damaged. Infestations were also reported in homes and barns in VIRGINIA.

MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella) was found in stored grain and grain products in OREGON, and the pest was common in buildings in CALIFORNIA where cereal grains and protein foodstuffs were stored. This insect quite frequently became numerous after the host material was removed in the latter State. MEAL MOTH (Pyralis farinalis) was encountered a few times in VIRGINIA during 1960.

AMERICAN PLUM BORER (Euzophera semifuneralis) mature larvae were found infesting approximately 25 percent of the sweetpotatoes in 3 storage bins in south central OKLAHOMA during the late fall. Some larvae were engraving wooden containers holding the sweetpotatoes. This may be the first host record for sweetpotatoes in the United States. NAVEL ORANGEWORM (Paramyelois transitella) was one of the most common and costly pests of almonds, walnuts and dried fruits in CALIFORNIA; very frequently a household pest due to storage of these materials in the homes. Also in California, BROWN HOUSE MOTH (Hofmannophila pseudospretella) was occasionally found infesting grain in storage.

As of June 30, 1960, all of the known KHAPRA BEETLE (Trogoderma granarium) infestations in the United States and the Republic of Mexico had been treated. For the fiscal year, this involved 37 sites and 7 million cubic feet of volume. Since the program began in 1954, 729 sites with a volume of 171 million cubic feet had been treated as of December 31, 1960. A vigorous inspection program in the states where infestations have been found (see map) is continuing, and suspect storage facilities in all other states are under periodic inspection. In 1960, these totaled 46,000 sites in the United States and the Republic of Mexico. In CALIFORNIA, the cooperative survey accounted for 4,980 man-days in inspecting 15,433 properties, resulting in 7,371 collections of specimens. Results of this inspection effort disclosed 2 infestations during 1960. Both of these were given eradicative fumigation; one in 1960 and the other early in 1961. Other Trogoderma encountered in inspection of feed mills, warehouses, farm properties, feed yards and distributions were T. parabile, T. inclusum, T. simplex, T. sternale, T. glabrum, T. ornatum and T. grassmani. All of the species mentioned above occur within California, with T. sternale, T. parabile and T. simplex being most frequently encountered. In ARIZONA, a total of 25 khapra beetle infestations were found during the year. No khapra beetle infestations were found during 1960 in NEW MEXICO, but the survey revealed an unusually large number of Trogoderma spp. during the summer months. The majority were identified as T. sternale, T. plagifer, T. parabile, T. inclusum and T. simplex. In WASHINGTON, T. parabile was the most prevalent species of Trogoderma found in feed houses and establishments handling stored products. T. parabile was the most common pest found in MONTANA, with many bins in the central and eastern areas reported infested. In TEXAS, 8 khapra beetle infestations were reported from January 5 through April 18 in the El Paso area.


342/341
251/251
19/19
28/28
87/87
Infestation found in warehouses, mills and farm storages in 34 U.S. Counties
▨ Counties where infestations occurred since the beginning of the program
727-properties infested (U.S. & Mexico) (171 million cu. ft. of storage volume)
726-properties treated (U.S. & Mexico) (171 million cu. ft. of storage volume)
Note: Numbers (above line = sites infested; below line = sites treated)
December 2, 1960

Status of the Khapra Beetle Program

Heavy populations of several species of DERMESTIDS were found in static grain in north central and northwest KANSAS, and various species of dermestids were troublesome around homes and in various seed and feed establishments in UTAH. VARIED CARPET BEETLE (Anthrenus verbasci) larvae were present in a feed mill in Sussex County, DELAWARE, in late March and early April. Attagenus sp. and Anthrenus spp. were of general occurrence over CALIFORNIA, with several species occurring in mill waste, used sacks, high protein storage, and in residences in food and carpets. Also in California, Perimegatoma variegatum was of very common occurrence over the State. This latter insect was rare in California until the khapra beetle inspections began; now it is known to occur generally.

A light HIDE BEETLE (Dermestes maculatus) infestation was found on the walls and floors of a hide warehouse in New Castle County, DELAWARE, in late May, and the pest became troublesome in a meat processing plant at Pawtucket, RHODE ISLAND, in early July. In CALIFORNIA, hide beetle was found occasionally infesting packaged goods and debris in mills and warehouses and was common in chicken houses. It was also occasionally damaging to lumber in structures where attractive food is available, in California.

LARDER BEETLE (Dermestes lardarius) occurred in stored grain in SOUTH DAKOTA during 1960, and larvae and adults of this pest were abundant in remains of a honey bee colony at Esmond, RHODE ISLAND. Also in Rhode Island, adults of BLACK LARDER BEETLE (D. ater) became numerous and troublesome in a home in Wakefield County. Debris in the incinerator was heavily infested with larvae and adults in early October.

DRUGSTORE BEETLE (Stegobium paniceum) infestations were found in stored products in OREGON homes and they occurred in homes and barns in VIRGINIA. In CALIFORNIA, drugstore beetle was probably more frequently complained of in 1960 than in past years. It occurred in homes, packaged goods and candy bars, as well as in feed mills and grain storage and dry pet food. Infestations of CIGARETTE BEETLE (Lasioderma serricorne) were present in some VIRGINIA homes and barns, and many reports of infestations in cereals and spices were received in MARYLAND.

LESSER GRAIN BORER (Rhyzopertha dominica) was found infesting grain in a Portland, OREGON, mill December 8. The pest was unusually heavy during 1960 in KANSAS and was one of the major insects attacking stored grain in TEXAS.

RED-LEGGED HAM BEETLE (Necrobia rufipes) infested cured ham in an establishment in Goochland County, VIRGINIA, during 1960, and was found heavily infesting copra residue in the hold of a freighter at a Providence, RHODE ISLAND, wharf on May 19.

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) adults were present in a feed mill in Sussex County, DELAWARE, in mid-March, and the pest was common in MARYLAND during the year, infesting stored products in many homes over the State. In MAINE, heavy infestations were reported in general foodstuffs in an area of Kennebec County. Saw-toothed grain beetle was one of the major species found in stored wheat in MISSOURI during the December 1959 through February 1960 survey, and it remained one of the two most dominant species of stored grain pests in KANSAS, although populations were only average in abundance. The species was one of the principal pests in farm-stored grain in OKLAHOMA and one of the major pests of stored grain in TEXAS. In UTAH, saw-toothed grain beetle was annoying in residences, infesting various foodstuffs, and was a pest in grain mills, seed and feed houses and granaries. Damage by this insect was reported from Tripp County, SOUTH DAKOTA, and infestations were reported more frequently than in previous years in NORTH DAKOTA. Saw-toothed grain beetle infested stored grain and grain products during 1960 in OREGON and was commonly taken in mills and storage units (usually debris) in CALIFORNIA. The beetle was also one of the insects which caused warehousemen to fumigate in southeastern WASHINGTON during the winter of 1960.

FLAT GRAIN BEETLE (Cryptolestes pusillus)was one of the common pests infesting stored grain and grain products in OREGON; a major pest of stored grain in TEXAS and OKLAHOMA; one of the species found in stored wheat in MISSOURI during the December 1959 through February 1960 survey; and was average in abundance in KANSAS, but one of the two most dominant species infesting stored grain. RUSTY GRAIN BEETLE (C. ferrugineus) infestations were reported more frequently than in previous years in NORTH DAKOTA, and the species was one of the insects which caused warehousemen in southeastern WASHINGTON to fumigate during the winter of 1960.

RICE WEEVIL (Sitophilus oryzae) was a major pest of stored grain in TEXAS and was one of the insects that plagued OKLAHOMA farmers who did not take adequate precautionary measures to protect their farm-stored grain. The weevil was also one of the species found in the survey of stored wheat during the period December 1959 through February 1960 in MISSOURI. A few occurrences of rice weevil were reported during 1960 in OREGON, and the pest was quite frequently found in feed rooms and in mill debris in CALIFORNIA. GRANARY WEEVIL (S. granarius) was a pest in farm-stored grain in OKLAHOMA, and was troublesome about homes, grain mills, granaries and feed and seed establishments in UTAH. Infestations of this weevil were also present in stored grain and grain products in OREGON, and were quite frequently found in feed rooms and in mill debris in CALIFORNIA. Infestations of granary weevil in MARYLAND were about normal, but did injure corn and small grains in most sections of the State during 1960.

CADELLE (Tenebroides mauritanicus) caused injury to wheat in storage in St. Marys County, MARYLAND, and grains in some other sections of the State. The beetle was one of the pests that caused trouble in farm-stored grain in OKLAHOMA, and was one of the pests found in stored wheat in MISSOURI during the December 1959-February 1960 survey. Cadelle was commonly found infesting stored grain and grain products in OREGON, and infested caked grain debris in CALIFORNIA.

DEPRESSED FLOUR BEETLE (Palorus subdepressus) adults occurred in a Sussex County, DELAWARE, feed mill in mid-March.

RED FLOUR BEETLE (Tribolium castaneum) infestations were found in stored grain and grain products in OREGON during 1960, and light infestations were present generally in CALIFORNIA. The infestations in California were usually kept under control by sanitation and treatment for other storage pests. The pest was also found occasionally in retail stores, in storage or packaged cereals. In southeast WASHINGTON, red flour beetle was one of the main stored-wheat insects during the year and was partially responsible for warehousemen doing some fumigating. Larvae and adults of this species were very abundant in stored grain throughout NEW MEXICO, and infestations were reported more frequently than in previous years in NORTH DAKOTA. In MISSOURI, red flour beetle was one of the major species of insects found in stored wheat during the December 1959-February 1960 survey. The pest was also found in a hay loft, stanchion area and milk room of a barn at Thetford, VERMONT.

CONFUSED FLOUR BEETLE (Tribolium confusum) was a common packaged food pest during 1960 in ALASKA, and infestations occurred in stored grain and grain products in OREGON. In CALIFORNIA, confused flour beetle was generally light, and infestations were usually kept under control by sanitation and treatment for other storage pests. It was occasionally found in retail stores in storage or packaged cereals, however. Reports of infestations by confused flour beetle in NORTH DAKOTA were more frequent than in previous years, and the pest infested grains and other stored products in homes, granaries and other establishments in UTAH. The beetle was one of the major pests of farm-stored grain in OKLAHOMA during 1960, and it was a problem in stored grain in TEXAS. In RHODE ISLAND, an infestation of confused flour beetle was observed in South Kingstown in early May.

Large numbers of a TENEBRIONID (Tribolium madens), in conjunction with saw-toothed grain beetle, were found infesting stored grain near Vernal, Uintah County, UTAH, during the summer; and in NEBRASKA, another TENEBRIONID (Platydema ruficorne) occurred in shelled corn in Colfax County. YELLOW MEALWORM (Tenebrio molitor) was very common under decaying feed or old sacks in feed stores and warehouses during the summer months in NEW MEXICO, and infestations were reported in homes and barns in VIRGINIA. BROAD-HORNED FLOUR BEETLE (Gnathocerus cornutus) was present in many CALIFORNIA locations, usually mixed with populations of other insects.

A FUNGUS BEETLE (Typhaea stercorea) was detected in several VIRGINIA localities during 1960, usually in grain infested with other stored-product insects, and was of only secondary importance. Adults of this beetle were numerous in a bin of stored wheat in Deuel County, NEBRASKA, during the year. HAIRY SPIDER BEETLE (Ptinus villiger) infested feed grain which was received from outside the State at Pawtucket, RHODE ISLAND, in April. The species later caused concern in a home in Pascoag, Rhode Island, occurring occasionally in all rooms of the house. BROWN SPIDER BEETLE (P. clavipes) was quite frequently found in stored grains, homes and warehouses in CALIFORNIA, with populations occasionally being heavy.

GRAIN MITE (Acarus siro) was commonly found in feed samples in OREGON during 1960, and an unspecified MITE caused considerable loss in dairy ration concentrates in the Juneau area of ALASKA during the year.

BENEFICIAL INSECTS

LADY BEETLES were abundant during the 1960 season in several states. TRANSVERSE LADY BEETLE (Coccinella transversoguttata) and Hippodamia tredecimpunctata tibialis were unusually abundant in MAINE during late June, attacking aphids on potatoes. Egg clusters were very common with H. tredecimpunctata tibialis dominant, followed by other miscellaneous species. Adults and larvae of Coleomegilla maculata were very abundant throughout DELAWARE during late April in fields of clover and alfalfa. In MARYLAND, various species of lady beetles were abundant in alfalfa and tobacco, feeding principally on pea aphid and green peach aphid. Lady beetle larvae were first observed in ILLINOIS in fields of clover and alfalfa the week of May 15, at which time adult numbers varied 10-500 per 10 sweeps. The species most commonly found in these crops were CONVERGENT LADY BEETLE (Hippodamia convergens), H. tredecimpunctata, Coccinella novemnotata and Coleomegilla maculata.

In NEBRASKA, Hippodamia spp. first appeared April 25 and averaged 2-5 per 10 sweeps through August. The highest count of 62 larvae per 10 sweeps was noted in a field of alfalfa in Dundy County on September 16. In certain areas of Nebraska, these insects built up to sufficient numbers during 1960 to aid in predatory control. Hippodamia spp. were abundant in all economic crops in WYOMING during the 1960 season. Large populations occurred in alfalfa, corn and fields of potatoes throughout the State. Convergent lady beetle and Coleomegilla maculata fuscilabris were present in normal numbers in KANSAS during the season. Convergent lady beetle was one of the most common predators in OKLAHOMA during 1960, with about the same numbers reported as during 1959. Convergent lady beetle was the primary species of this group encountered in ARIZONA during the 1960 season; and in NEVADA, various species of lady beetles were the most effective predators of aphids on all crops. The occurrence of lady beetles on most commercial crops throughout CALIFORNIA during 1960 was credited with a high degree of control.

MELYRIDS (Collops spp.) were more prominent in WYOMING during 1960 than during 1959, being especially numerous in alfalfa in the southeast area and in the Big Horn Basin. In ARIZONA, populations of melyrids were present and variable during the spring and summer.

KLAMATHWEED BEETLES (Chrysolina spp.) exerted their beneficial effects in CALIFORNIA and WASHINGTON during the 1960 season. C. gemellata was of general occurrence in the fringe areas of klamathweed infestation in CALIFORNIA. Thousands of acres of this weed have been eliminated and normal range vegetation restored in the northern portion of the State in past years by this insect. In WASHINGTON, C. quadrigemina was widespread enough on San Juan and Orcas Islands during 1960, that it is difficult to locate blooming-age plants of the weed where it once was abundant.

Colonies of a GORSE WEEVIL (Apion ulicis) in Coos, Curry and Lane Counties, OREGON, are slowly building up and spreading. Approximately 1,000 adults were released at four sites in Douglas County during 1960, where gorse has been accidentally introduced on logging equipment. In CALIFORNIA, this weevil extended its range into new areas where it is satisfactorily reducing gorse stands.

Large numbers of adult CURCULIONIDS (Myrmex lineata and Eupagodes sp.) were present on tops of Chrysothamnus sp. (rabbitbrush) at Hayden and Neola in the Uintah Basin of UTAH on July 12. Sizeable patches of the brush plants were dead or dying due to root-boring injury by these species. In this area of Utah, killing out of rabbitbrush is beneficial, as better range plants soon replace this objectionable plant species.

A CERAMBYCID (Crossidius pulchellus) killed out turpentine weeds in large areas of Torrance, Guadalupe and Lincoln Counties, NEW MEXICO, during the 1960 season.

Adults and larvae of a GROUND BEETLE (Calosoma sp.) caused high mortality to armyworm larvae infesting sweet corn at a location in Wicomico County, MARYLAND.

Approximately 700 adults of a CINNABAR MOTH (Tyria jacobaeae) were released May 5-6 at sites in Benton and Linn Counties, OREGON, to aid in control of tansy ragwort. A larval colony was observed actively feeding on the host plant at the Linn County release site on June 21. In CALIFORNIA, this cinnabar moth was introduced during 1959 and became established in the tansy ragwort infestation in Mendocino County.

NABIDS (Nabis spp.) were effective in controlling various pests on several crops in NEVADA during the 1960 season,and populations were variable in ARIZONA during the spring and summer. Nabids were present in moderate numbers in all field crops in WYOMING throughout the summer. Nabids were some of the more common predators occurring in OKLAHOMA during the 1960 season, being present in about the same numbers as during 1959; and they were present in normal numbers in KANSAS during the year. Low populations of nabids prevailed in NEBRASKA through May, with an increase occurring during June. Average early counts in alfalfa were 4-5 per 10 sweeps and later averaged 15 per 10 sweeps. Nabid adults were first swept from clover and alfalfa in ILLINOIS the week of May 1 and first nymphs were observed the week of May 15; populations varied 0-80 per 100 sweeps during May and June. Nabids were numerous in alfalfa statewide in DELAWARE most of the 1960 season.

Larvae of LACEWINGS (Chrysopa spp.) were very numerous in RHODE ISLAND during the year and may have significantly contributed to reduction in numbers of pea aphid. Lacewings were abundant in fields of alfalfa and tobacco in MARYLAND, feeding principally upon pea aphid and green peach aphid. Adults of GOLDEN-EYE LACEWING (C. oculata) were first observed in ILLINOIS during the 1960 season in fields of clover and alfalfa during the week of May 1. First larvae of this predator were observed in the central portion of the State the week of May 29. Populations of golden-eye lacewing were low throughout the season in Illinois. Lacewings were present in very low numbers in alfalfa in NEBRASKA during 1960, but occurred in normal numbers in KANSAS during the season. Lacewings were reported in about the same numbers in OKLAHOMA during 1960 and during 1959, and were present in ARIZONA during the spring and summer months.

Large populations of FLOWER BUGS (Orius spp.) occurred in fields of corn in southeastern WYOMING and averaged 30-40 per plant in a check of 50 plants per field during August. Moderate numbers were also present in fields of potatoes. Flower bug adults averaged 10 per 10 sweeps in corn and alfalfa in NEBRASKA throughout the 1960 season, with the highest count of 50 per 10 sweeps in alfalfa in the southeast district in mid-August. A FLOWER BUG (O. insidiosus) was present in normal numbers during the season in KANSAS and was found in approximately the same numbers in OKLAHOMA as during 1959. Flower bugs were encountered in variable numbers during the spring and summer of 1960 in ARIZONA.

Variable populations of BIG-EYED BUGS (Geocoris spp.) were present in ARIZONA during the spring and summer months, and exerted effective control of various pests on different crops in NEVADA during the season.

Adults and nymphs of a MIRID (Microphylellus modestus) were found on terminal leaves of elm in DELAWARE, probably feeding on woolly aphid honeydew and/or elm leaf beetle eggs which were fairly common during May. This constituted a new record for the State.

Larvae of unspecified species of SYRPHIDS first appeared in clover and alfalfa in ILLINOIS the week of May 1, but populations remained low throughout the season. However, syrphid larvae were quite numerous in NEVADA during 1960, and were present in ARIZONA during the spring and summer. Also in Arizona, variable numbers of a TACHINID (Voria ruralis) were found during the same period. No parasitism of European corn borer by another TACHINID (Lydella grisescens) has been found in DELAWARE in recent years. Adult Lydella releases were made in the State during June 1959, and collections of larvae of European corn borer made in the winter of 1959 and the spring of 1960 indicate reestablishment of this previously abundant species and dispersal in 5 of the 6 release areas.

Pollinations of legume seed fields by HONEY BEE (Apis mellifera) were disrupted by cool, windy, rainy weather during June in WASHINGTON, coupled with unusually hot weather during the last half of July in the eastern portion of the State. Most red clover seed yields in the Columbia Basin were only about one-half as large as in 1959. A very serious bee poisoning problem developed in the lower Yakima Valley of Washington during August and September, caused by a new carbamate insecticide applied to sweet corn for the control of corn earworm. State honey production was 4,400,000 pounds, unchanged from 1959, but otherwise the lowest in Washington since 1956. Apiary inspections during 1960 in OREGON revealed that, of a total of 29,045 honey bee colonies inspected, 1,247 were infected with American foulbrood and 134 infected with European foulbrood. A total of 2,300 apiaries was inspected in Oregon, of which 449 were found infected. Pollination of crops by honey bee in CALIFORNIA was high during 1960, with good sets of fruit in major crops. Disease was probably a little higher in these insects than during 1959 and pesticide losses were also higher. A BEE MITE (Acarapis externus) was discovered generally infesting honey bee colonies in the State, but the mite is considered to be noneconomic. A total of 8,057 colonies of honey bee was inspected for American foulbrood disease in KANSAS during 1960, with 119 cases (1.48 percent) of the disease being found. The honey crops in Kansas were spotted and generally short compared with 1959, but honey quality was about average. In RHODE ISLAND, considerable swarming of honey bees occurred during mid-May, and 10.5 percent of bee yards inspected in the State during 1960 was found to be infected with American foulbrood.

Populations of ALKALI BEE (Nomia melanderi) continued to expand in Walla Walla and Grant Counties, WASHINGTON, during 1960, and maintained the status quo in Yakima and Benton Counties. Emergence was normal, occurring during mid-June in Walla Walla County and in late June in Grant County. Alfalfa seed yields were good during 1960 in Washington. Bee parasite populations were reduced somewhat, but bee poisoning was evident at times during the summer. Alkali bee emerged at Milton-Freewater, OREGON, on May 23, and in Malheur County by June 10. Activity ceased in the State by August 25. In NEVADA, populations of alkali bee were below those of previous years except in Humboldt County, where artificial beds were constructed. Also in Nevada, several other species of BEES belonging to the genera Anthophora, Bombus and Megachile were observed as pollinators of legume seed crops in certain areas during the 1960 season.

Several parasites of spotted alfalfa aphid, two BRACONIDS (Trioxys utilis and Praon palitans) and an EULOPHID (Aphelinus semiflavus), were the most common beneficial insects encountered in ARIZONA during 1960. Variable populations of these hymenopterous parasites were present throughout the spring and summer, with highest numbers occurring during the spring. These same three parasites assisted in the control of spotted alfalfa aphid in NEVADA during the year. In OKLAHOMA, another EULOPHID (Aphelinus nigritus), was introduced into a field of small grain heavily infested with aphids near Perkins, Payne County, and became established. This is the first time in the State that an intentional introduction of this species was successful.

Populations of a BRACONID (Aphidius testaceipes) built up gradually during late winter and early spring in fields of small grain in many areas of OKLAHOMA. During mid-April, populations began to materially reduce greenbug infestations in heavily infested fields in south central, central and north central areas of the State. By late April, most greenbug infestations were under control and were completely eliminated later. This is the most dramatic example of biological control noted in Oklahoma during the past several years. In OREGON, the introduction of a small number of another BRACONID (Opius ferrugineus), a parasite of western cherry fruit fly, was made in the Corvallis area of Benton County during the summer of 1960. Specimens of still another BRACONID (Aphidius pisivorus) were reared from pea aphid taken at Union Gap in the Yakima Valley of WASHINGTON.

Beneficial insects were probably more active and present in greater numbers in CALIFORNIA during 1960 than in past years. This is possibly due to the accent placed on this group and the research and release of species instrumental in biological control. Parasite releases by the University of California became established in most cases. Several new parasites of coccids, aphids and mites are showing commercial results. Many of the previously introduced parasites of spotted alfalfa aphid, olive scale, black scale and California red scale have either controlled the host insects or aided materially in their control.

A SCOLIID (Scolia dubia) was abundant during August in MARYLAND, flying about lawns in central and southern sections of the State; and was frequently reported as being common in several counties of VIRGINIA, particularly around infestations of green June beetle.

CAROLINA MANTIS (Stagmomantis carolina) was very active in the Lincoln area of Lancaster County, NEBRASKA, during the last half of October, and several reports indicated concentrations around residences. An undetermined species of BENEFICIAL MITE belonging to the family Stigmaeidae was found in orchards in the southern portion of ILLINOIS for the first time.

MISCELLANEOUS INSECTS

More than 80,000 acres were treated with soil insecticides during 1960 to suppress JAPANESE BEETLE (Popillia japonica) populations and retard spread. This work was centered principally in GEORGIA, ILLINOIS, INDIANA, KENTUCKY, MICHIGAN and TENNESSEE. Surveys made during the past three years revealed the potential danger of long-distance spread of Japanese beetle through movement of airplanes from commercial and military airports within the area of general infestation. With explosive populations at some airports during 1960, it was necessary to increase the aerosol treatment of planes, as well as the application of foliage sprays on, and adjacent to, landing strips. A more permanent solution to the problem is being accomplished through the current program of applying soil insecticide to the airports and their environs. This work, which got underway last fall, has resulted in the treatment of more than 10,000 acres on 15 commercial and military airports; the airport authorities are assuming most of the cost of this work. Work is continuing on development of a method to mass-produce milky disease, but a breakthrough involving sporulation of the organism has not been accomplished.

In NORTH CAROLINA, Japanese beetle adults first emerged May 23 in New Hanover County; June 7 in Wayne County; the week of June 19 in Forsyth County; and on June 22 in Henderson County, where the heaviest infestation ever seen in the area caused severe injury by feeding in whorls of corn. Japanese beetle continued to spread in many areas of INDIANA during 1960. Most infestations were localized in areas adjacent to railroads, but the new infestation in Evansville extends from the Ohio River to a point north of the city. New county records in Indiana were Vanderburgh, Ripley, Martin, Daviess and Grant. Other new localities in previously infested counties included Ijamsville, North Manchester, Brimfield and Milford Junction. A total of 94 traps were placed in likely spots in SOUTH DAKOTA during the 1960 season, but trapping was negative for Japanese beetle.

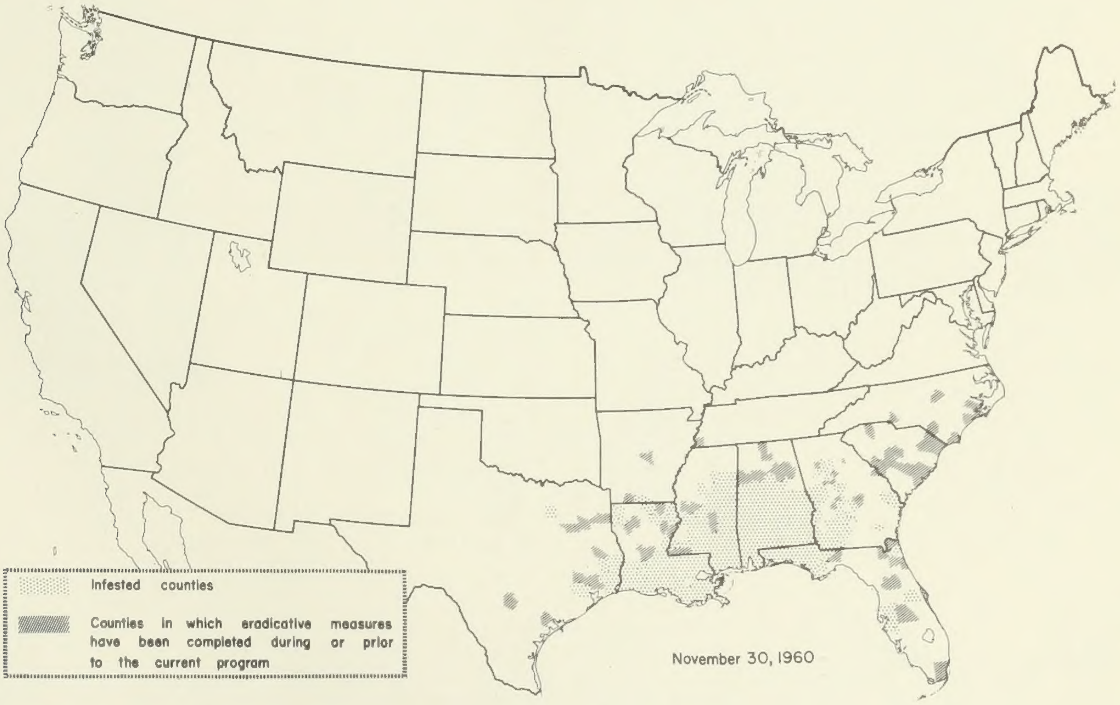
Heavy adult flights of GREEN JUNE BEETLE (Cotinis nitida) were noted in New Castle and Sussex Counties, DELAWARE, in early July, and one specimen of this species was discovered during inspections of westbound aircraft at the Portland International Airport in OREGON during the summer of 1960. Two specimens of ASIATIC GARDEN BEETLE (Autoserica castanea) were also recovered during these inspections at this same location. Asiatic garden beetle was also intercepted at airports in FLORIDA from planes arriving from the New England States, as were specimens of ORIENTAL BEETLE (Anomala orientalis). Larvae of oriental beetle were taken for the first time in Hoke County, NORTH CAROLINA, during the 1960 season.

OREGON FIR SAWYER (Monochamus oregonensis) emerged from several homes built of green lumber in ALASKA. A NAUTICAL BORER (Xylotrechus nauticus) occurred in dwellings in CALIFORNIA, damaging woodwork; being reported more frequently during the 1960 season than in past years. This was also true of a CERAMBYCID (Arhopalus productus) in the same State.

POWDER-POST BEETLES were reported as damaging during 1960, especially to bamboo products. Lyctus cavicollis was a damaging nuisance in woodwork and furniture in homes in many locations over CALIFORNIA, and L. brunneus was particularly damaging to bamboo. Trogoxylon aequale was also damaging to bamboo products in many instances over California during 1960. In UTAH, locally purchased split bamboo blinds were found infested with Lyctus africanus. Many reports of damage by Lyctus spp. were received in IOWA. In one instance, a sizeable quantity of bamboo drapery material was extensively damaged. In WASHINGTON, an unusual infestation of WHARF BORER (Nacerdes melanura) was found in the well basement of a power plant at Bremerton, Kitsap County. The source of the infestation is not known. LEAD-CABLE BORER (Scobicia declivis) caused severe damage to lead and plastic conduits in CALIFORNIA during the year, and was a general pest encountered in homes in the State. CONFUSED FLOUR BEETLE (Tribolium confusum) and GRAIN MITE (Acarus siro) were found in milk rooms in VERMONT and the latter species was also found in the litter of a poultry house in the same State.

Half-grown larvae of a GELECHIID (Chionodes arenella) were found infesting 70 percent of the stand of mammoth wildrye (Elymus giganteus) along beaches in Narragansett, Washington County, RHODE ISLAND. This grass is important in the prevention of beach erosion. Large adult numbers of a LIBYTHEID (Libytheana backmani) migrating across Val Verde, Howard and Dawson Counties, TEXAS, caused concern to many growers in the areas; and the appearance of large numbers of adults of a NOCTUID (Chorizagrotis inconcinna) in the western portion of the State caused concern to residents there. A FAN PALM MOTH (Litoprosopus coachella) occasionally entered homes and businesses in CALIFORNIA, the larvae causing serious damage by feeding on books, clothing and other materials. A spectacular emergence of adult CHIRONOMIDS from a nearby pond at the Point Judith lighthouse in Washington County, RHODE ISLAND, occurred on July 15. A SARCOPHAGID (*Sarcophaga aldrichi*), parasitic in tent caterpillars, became very abundant during the spring of 1960 in PENNSYLVANIA and resulted in rumors and speculations. Another parasite, an unidentified WASP, that attacks grubs, became very abundant and caused some concern in the southeastern area of the State.

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - At the close of the 1960 season, 2,459,852 acres in 9 southern states had been treated since the beginning of the Federal-state cooperative program. A substantial amount of work has been completed in 83 counties and all infestations have been treated in 75 other counties on the northern and western periphery of the infested area. In ARKANSAS, NORTH CAROLINA and SOUTH CAROLINA, where only small, isolated infestations remain, the eradication program is considered to be in the "mopup" stage. Among the important accomplishments during 1960 were: The successful prevention of long-distance artificial spread of imported fire ant without curtailing the sale or movement of nursery stock, sand, soil, sod and other similar products; the practical elimination of the pest from areas in ARKANSAS, NORTH CAROLINA, SOUTH CAROLINA and outlying counties in GEORGIA, ALABAMA, MISSISSIPPI, TEXAS and FLORIDA; and the effective control in large blocks within the generally infested area, results which have contributed to improved agricultural production. Surveys for imported fire ant in OKLAHOMA during the 1960 season continued to be negative.



Infested counties
Counties in which eradicative measures have been completed during or prior to the current program
November 30, 1960

Status of Imported Fire Ant Program

Activity of CARPENTER BEE (*Xylocopa virginica*), which is generally distributed over CALIFORNIA, was of considerable concern to homeowners in that State, apparently being more noticeable during 1960 than in past years. A HORNTAIL (*Urocerus flavicornis*) emerged from several houses in ALASKA that had been constructed of green lumber. In GEORGIA, GIANT HORNET (*Vespa crabro germana*) was reported from Blairsville, Union County, and from Bartwell, Hart County, for first county records during the 1960 season.

Flights of a small species of CRICKET (Nemobius fasciatus) were noted as very annoying in many cities over IOWA during late August and early September. In OKLAHOMA, specimens of an undetermined species of EMBIOPTERAN were collected in a native grass-weed-mesquite pasture near Loveland, Tillman County, on September 21, for the first record of this order of insects in the State. SPRINGTAILS (Hypogastrura armata and Entomobrya unostrigata) were nuisances in homes, yards and swimming pools in many instances during 1960 in CALIFORNIA. Both species are widespread over the State.

BROWN GARDEN SNAIL (Helix aspersa), which is widespread over CALIFORNIA, was most damaging to flowers and gardens, as well as being a yard and building nuisance during the 1960 season. Several SNAILS (Vallonia pulchella, Oxychilus draparnaldi and O. allarius) and a SLUG (Limax marginatus) were also reported locally in lawns and in gardens in California during the season.

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